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Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe 165 170 175

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His Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn 85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Pro Arg Ala Glu Asp Thr Ala Val 100 105 110

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<213> Homo sapiens

<400> 20

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Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe 35 40 45

Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu 50 55 60

Glu Trp Val Ala Gly Ile Trp Asn Asp Gly Ile Asn Lys Tyr His Ala 65 70 75 80

His Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Pro Arg Ala Glu Asp Thr Ala Val 100 105 Tyr Tyr Cys Ala Arg Ala Arg Ser Phe Asp Trp Leu Leu Phe Glu Phe 120 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly 135 Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly 150 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val 165 170 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val 200 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu 245 250 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr 265 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val 275 280 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val 295 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser 305 310 315 320 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu 325 330 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala 345 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro 355 Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln 370 375 380

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala 385 390 395 400

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr 405 410 415

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu 420 425 430

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser 435 440 445

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser 450 455 460

Leu Ser Pro Gly Lys 465

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<212> DNA

<213> Homo sapiens

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<210> 22

<211> 465

<212> PRT

<213> Homo sapiens

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Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln 20 25 30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe 35 40 45

Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu 50 55 60

Glu Trp Val Ala Gly Ile Trp Asn Asp Gly Ile Asn Lys Tyr His Ala 65 70 75 80

His Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn 85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Pro Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Arg Ala Arg Ser Phe Asp Trp Leu Leu Phe Glu Phe 115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
130 135 140

Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser 145 150 155 160

Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val 165 170 175 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe 180 185 190

Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val 195 200 205

Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val 210 215 220

Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys 225 230 235 240

Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro 245 250 255

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser 260 265 270

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp 275 280 285

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn 290 295 300

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val 305 310 315 320

Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu
325 330 335

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys 340 345 350

Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr 355 360 365

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr 370 375 380

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu 385 390 395 400

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu 405 410 415

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
420 425 430

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu 435 440 445

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly 450 455 460

Lys

465

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- <212> PRT
- <213> Homo sapiens
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- Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 20 25 30
- Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe 35 40 45
- Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu 50 55 60
- Glu Trp Val Ala Gly Ile Trp Asn Asp Gly Ile Asn Lys Tyr His Ala 65 70 75 80
- His Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn 85 90 95
- Thr Leu Tyr Leu Gln Met Asn Ser Pro Arg Ala Glu Asp Thr Ala Val 100 105 110
- Tyr Tyr Cys Ala Arg Ala Arg Ser Phe Asp Trp Leu Leu Phe Glu Phe 115 120 125
- Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
 130 135 140
- Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser 145 150 155 160
- Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
 165 170 175
- Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe 180 185 190
- Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val 195 200 205
- Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val 210 215 220
- Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys 225 230 235 240
- Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe Glu Gly Gly 245 250 255
- Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile 260 265 270
- Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu

Asp	Pro 290	Glu	Val	Gln	Phe	Asn 295	Trp	Tyr	Val	Asp	Gly 300	Val	Glu	Val	His	
Asn 305	Ala	Lys	Thr	Lys	Pro 310	Arg	Glu	Glu	Gln	Phe 315	Asn	Ser	Thr	Tyr	Arg 320	
Val	Val	Ser	Val	Leu 325	Thr	Val	Leu	His	Gln 330	Asp	Trp	Leu	Asn	Gly 335	Lys	
Glu	Tyr	Lys	Cys 340	Lys	Val	Ser	Asn	Lys 345	Gly	Leu	Pro	Ser	Ser 350	Ile	Glu	
Lys	Thr	Ile 355	Ser	Lys	Ala	Lys	Gly 360	Gln	Pro	Arg	Glu	Pro 365	Gln	Val	Tyr	
Thr	Leu 370	Pro	Pro	Ser	Gln	Glu 375	Glu	Met	Thr	Lys	Asn 380	Gln	Val	Ser	Leu	
Thr 385	Cys	Leu	Val	Lys	Gly 390	Phe	Tyr	Pro	Ser	Asp 395	Ile	Ala	Val	Glu	Trp 400	
Glu	Ser	Asn	Gly	Gln 405	Pro	Glu	Asn	Asn	Tyr 410	Lys	Thr	Thr	Pro	Pro 415	Val	
Leu	Asp	Ser	Asp 420	Gly	Ser	Phe	Phe	Leu 425	Tyr	Ser	Aṛg	Leu	Thr 430	Val	Asp	
Lys	Ser	Arg 435	Trp	Gln	Glu	Gly	Asn 440	Val	Phe	Ser	Cys	Ser 445	Val	Met	His	
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ggc.	tccg	tga 🤅	9999	ccgat	tt ca	accat	ctc	c aga	agaca	aatt	ccaa	agaad	cac	gctgt	atctg	300
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<212> PRT

<213> Homo sapiens

<400> 26

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Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Phe 35 40 45

Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 60

Glu Trp Val Ala Ala Ile Trp Asn Asp Gly Glu Asn Lys His His Ala 65 70 75 80 Gly Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val 100 105 Tyr Tyr Cys Ala Arg Gly Arg Tyr Phe Asp Trp Leu Leu Phe Glu Tyr 120 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly 135 Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly 150 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val 170 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val 200 Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu 245 250 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr 265 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val 275 280 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val 295 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser 305 310 315 320 Thr Tyr Arq Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala 345 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro 355 Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln 370 375 380

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala 385 390 395 400

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr 405 410 415

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu 420 425 430

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser 435 440 445

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser 450 455 460

Leu Ser Pro Gly Lys 465

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<211> 1395

<212> DNA

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<210> 28

<211> 465

<212> PRT

<213> Homo sapiens

<400> 28

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20 25 30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Phe 35 40 45

Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu 50 55 60

Glu Trp Val Ala Ala Ile Trp Asn Asp Gly Glu Asn Lys His His Ala 65 70 75 80

Gly Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn 85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val

Tyr Tyr Cys Ala Arg Gly Arg Tyr Phe Asp Trp Leu Leu Phe Glu Tyr 115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
130 135 140

Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser 145 150 155 160

Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val 165 170 175

- Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe 180 185 190
- Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val 195 200 205
- Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val 210 215 220
- Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys 225 230 235 240
- Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro
 245 250 255
- Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser 260 265 270
- Arg Thr Pro Glu Val Thr Cys Val Val Asp Val Ser His Glu Asp 275 280 285
- Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn 290 295 300
- Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val 305 310 315 320
- Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu 325 330 335
- Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys 340 345 350
- Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr 355 360 365
- Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr 370 375 380
- Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu 385 390 395 400
- Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu 405 410 415
- Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
 420 425 430
- Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
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- Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
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Lys

465

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<213> Homo sapiens

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- Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
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- Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Phe 35 40 45
- Ser Asn Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu 50 55 60
- Glu Trp Val Ala Ala Ile Trp Asn Asp Gly Glu Asn Lys His His Ala 65 70 75 80
- Gly Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn 85 90 95
- Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 100 105 110
- Tyr Tyr Cys Ala Arg Gly Arg Tyr Phe Asp Trp Leu Leu Phe Glu Tyr
 115 120 125
- Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly 130 135 140
- Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser 145 150 155 160
- Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val 165 170 175
- Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe 180 185 190
- Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val 195 200 205
- Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val 210 215 220
- Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys 225 230 235 240
- Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe Glu Gly Gly 245 250 255
- Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile 260 265 270
- Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu

275 280 285	
Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His 290 295 300	
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg 305 310 315 320	
Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys 325 330 335	
Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu 340 345 350	
Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr 355 360 365	
Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu 370 375 380	
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp 385 390 395 400	
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val 405 410 415	
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp 420 425 430	
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Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu 450 455 460	
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<212> PRT

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<400> 32

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Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe 35 40 45

Ser Phe His Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu 50 55 60

Glu Trp Met Gly Ile Ile His Pro Gly Ala Ser Asp Thr Arg Tyr Ser 65 70 75 80 Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Asn Ser Asn Ser Ala Thr Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Phe Cys Ala Arg Gln Arg Glu Leu Asp Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser 450 455 Pro Gly Lys 465 <210> 33 <211> 1389 <212> DNA <213> Homo sapiens <400> 33 atggggtcaa ccgccatcct cgccctcctc ctggctgttc tccaaggagt ctgtgccgag 60 gtgcagctga tgcagtctgg agcagaggtg aaaaagcccg gggagtctct gaagatctcc 120 tgtaagggtt ctggatacag cttttccttc cactggatcg cctgggtgcg ccagatgccc 180 gggaaaggcc tggagtggat ggggatcatc catcctggtg cctctgatac cagatacagc 240 cegteettee aaggeeaggt caccatetea geegacaact ceaacagege cacctacetg 300 cagtggagca gcctgaaggc ctcggacacc gccatgtatt tctgtgcgag acaaagggaa 360 ctcgactact ttgactactg gggccaggga accetggtca ccgtctctag tgcctccacc 420 aagggcccat cggtcttccc cctggcgccc tgctccagga gcacctccga gagcacagcg 480 gccctgggct gcctggtcaa ggactacttc cccgaaccgg tgacggtgtc gtggaactca 540 ggcgctctqa ccaqcgqcqt qcacaccttc ccaqctqtcc tacaqtcctc aggactctac 600 teceteagea gegtggtgae egtgeeetee ageaactteg geacceagae etacacetge 660 aacgtagatc acaagcccag caacaccaag gtggacaaga cagttgagcg caaatgttgt 720 gtegagtgec cacegtgece ageaceacet gtggeaggae egteagtett cetetteece 780 ccaaaaccca aggacaccct catgatctcc cggacccctg aggtcacgtg cgtggtggtg 840 gacgtgagcc acgaagaccc cgaggtccag ttcaactggt acgtggacgg cgtggaggtg 900

960

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qtcctcaccg ttgtgcacca ggactggctg aacggcaagg agtacaagtg caaggtctcc 1020 aacaaaqqcc tcccaqcccc catcgaqaaa accatctcca aaaccaaaqq qcaqccccqa 1080 gaaccacagg tgtacaccet geececatee egggaggaga tgaccaagaa ecaggteage 1140 ctgacctgcc tggtcaaagg cttctacccc agcgacatcg ccgtggagtg ggagagcaat 1200 qqqcagccgq agaacaacta caagaccaca cctcccatgc tggactccga cggctccttc 1260 ttcctctaca qcaaqctcac cqtqqacaaq aqcaqqtqqc aqcaqqqqaa cqtcttctca 1320 tgctccgtga tgcatgaggc tctgcacaac cactacacgc agaagagcct ctccctgtct 1380 ccgggtaaa 1389

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<211> 463

<212> PRT

<213> Homo sapiens

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Ser Phe His Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu 50 55 60

Glu Trp Met Gly Ile Ile His Pro Gly Ala Ser Asp Thr Arg Tyr Ser 65 70 75 80

Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Asn Ser Asn Ser 85 90 95

Ala Thr Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
100 105 110

Tyr Phe Cys Ala Arg Gln Arg Glu Leu Asp Tyr Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser 130 135 140

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala 145 150 155 160

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val 165 170 175

- Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala 180 185 190
- Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val 195 200 205
- Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His 210 215 220
- Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys 225 230 235 240
- Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val 245 250 255
- Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr 260 265 270
- Pro Glu Val Thr Cys Val Val Asp Val Ser His Glu Asp Pro Glu 275 280 285
- Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys 290 295 300
- Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser 305 310 315 320
- Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys 325 330 335
- Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile 340 345 350
- Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro 355 360 365
- Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu 370 375 380
- Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn 385 390 395 400
- Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser 405 410 415
- Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
 420 425 430
- Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu 435 440 445
- His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys 450 455 460

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<211> 1392

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gggaaaggcc	tggagtggat	ggggatcatc	catcctggtg	cctctgatac	cagatacagc	240
ccgtccttcc	aaggccaggt	caccatctca	gccgacaact	ccaacagcgc	cacctacctg	300
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cccccatgcc	catcatgccc	agcacctgag	ttcctggggg	gaccatcagt	cttcctgttc	780
cccccaaaac	ccaaggacac	tctcatgatc	tcccggaccc	ctgaggtcac	gtgcgtggtg	840
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agcgtcctca	ccgtcctgca	ccaggactgg	ctgaacggca	aggagtacaa	gtgcaaggtc	1020
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- Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe 35 40 45
- Ser Phe His Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu 50 55 60
- Glu Trp Met Gly Ile Ile His Pro Gly Ala Ser Asp Thr Arg Tyr Ser 65 70 75 80
- Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Asn Ser Asn Ser 85 90 95
- Ala Thr Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
 100 105 110
- Tyr Phe Cys Ala Arg Gln Arg Glu Leu Asp Tyr Phe Asp Tyr Trp Gly
 115 120 125
- Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser 130 135 140
- Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala 145 150 155 160
- Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 165 170 175
- Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala 180 185 190
- Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val 195 200 205
- Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His 210 215 220
- Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly 225 230 235 240
- Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe Glu Gly Gly Pro Ser 245 250 255
- Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
 260 265 270
- Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro 275 280 285
- Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala

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Ser Val Leu Thr Val Leu 325	His Gln Asp Trp Leu 330	Asn Gly Lys Glu Tyr 335	
Lys Cys Lys Val Ser Asn 340	Lys Gly Leu Pro Ser 345	Ser Ile Glu Lys Thr 350	
Ile Ser Lys Ala Lys Gly 355	Gln Pro Arg Glu Pro 360	Gln Val Tyr Thr Leu 365	
Pro Pro Ser Gln Glu Glu 370	Met Thr Lys Asn Gln 375	Val Ser Leu Thr Cys 380	
Leu Val Lys Gly Phe Tyr 385 390	_	Val Glu Trp Glu Ser 400	
Asn Gly Gln Pro Glu Asn 405	Asn Tyr Lys Thr Thr 410	Pro Pro Val Leu Asp 415	
Ser Asp Gly Ser Phe Phe 420	Leu Tyr Ser Arg Leu 425	Thr Val Asp Lys Ser 430	
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caggagagtg tcacagagca g	gacagcaag gacagcacct	acagcetcag cagcaccetg	600

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Asp	Thr	Thr	Gly 20	Glu	Ile	Val	Leu	Thr 25	Gln	Ser	Pro	Ala	Thr 30	Leu	Ser
Leu	Ser	Pro 35	Gly	Glu	Arg	Ala	Thr 40	Leu	Ser	Cys	Arg	Ala 45	Ser	Gln	Ser
Val	Ser 50	Ser	Tyr	Leu	Ala	Trp 55	Tyr	Gln	Gln	Lys	Pro 60	Gly	Gln	Ala	Pro
Arg 65	Leu	Leu	Ile	Tyr	Asp 70	Ala	Ser	Asn	Arg	Ala 75	Thr	Gly	Ile	Pro	Ala 80
Arg	Phe	Ser	Gly	Ser 85	Gly	Ser	Gly	Thr	Asp 90	Phe	Thr	Leu	Thr	Ile 95	Ser
Ser	Leu	Glu	Pro 100	Glu	Asp	Phe	Ala	Val 105	Tyr	Tyr	Cys	Gln	Gln 110	Arg	Ser
Asn	Trp	Pro 115	Pro	Leu	Thr	Phe	Gly 120	Gly	Gly	Thr	Lys	Val 125	Glu	Ile	Lys
Arg	Thr 130	Val	Ala	Ala	Pro	Ser 135	Val	Phe	Ile	Phe	Pro 140	Pro	Ser	Asp	Glu
Gln 145	Leu	Lys	Ser	Gly	Thr 150	Ala	Ser	Val	Val	Cys 155	Leu	Leu	Asn	Asn	Phe 160
Tyr	Pro	Arg	Glu	Ala 165	Lys	Val	Gln	Trp	Lys 170	Val	Asp	Asn	Ala	Leu 175	Gln
Ser	Gly	Asn	Ser 180	Gln	Glu	Ser	Val	Thr 185	Glu	Gln	Asp	Ser	Lys 190	Asp	Ser
Thr	Tyr	Ser 195	Leu	Ser	Ser	Thr	Leu 200	Thr	Leu	Ser	Lys	Ala 205	Asp	Tyr	Glu

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(213) Homo Saptens										
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agtgtcacag agcaggacag	caaggacagc acctacagcc	tcagcagcac cctgacgctg								
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Thr Pro Lys Glu Lys V	al Thr Ile Thr Cys Arg	Ala Ser Gln Ser Ile 45								
Gly Ser Ser Leu His T	rp Tyr Gln Gln Lys Pro 55	Asp Gln Ser Pro Lys 60								
Leu Leu Ile Lys Tyr A	la Ser Gln Ser Phe Ser 0 75	Gly Val Pro Ser Arg 80								
Phe Ser Gly Ser Gly Ser 85	er Gly Thr Asp Phe Thr 90	Leu Thr Ile Asn Ser 95								

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Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr
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Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
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Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
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Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
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Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
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Ser Lys Gly Glu Phe Thr Gly Thr Tyr Thr Thr Ala Val Thr Ala Thr 50 55 60

Ser Asn Glu Ile Lys Glu Ser Pro Leu His Gly Thr Gln Asn Thr Ile 70 75 80

Asn Lys Arq Thr Gln Pro Thr Phe Gly Phe Thr Val Asn Trp Lys Phe Ser Glu Ser Thr Thr Val Phe Thr Gly Gln Cys Phe Ile Asp Arg Asn 100 105 Gly Lys Glu Val Leu Lys Thr Met Trp Leu Leu Arg Ser Ser Val Asn Asp Ile Gly Asp Asp Trp Lys Ala Thr Arg Val Gly Ile Asn Ile Phe 135 Thr Arg Leu Arg Thr Gln Lys Glu Gln Leu Leu Ala Ser Leu Leu Glu 155 Ala Asp Lys Cys Lys Glu Arg Glu Glu Lys Ile Ile Leu Val Ser Ser 165 170 Ala Asn Glu Ile Asp Val Arg Pro Cys Pro Leu Asn Pro Asn Glu His 185 Lys Gly Thr Ile Thr Trp Tyr Lys Asp Asp Ser Lys Thr Pro Val Ser Thr Glu Gln Ala Ser Arg Ile His Gln His Lys Glu Lys Leu Trp Phe 215 Val Pro Ala Met Val Glu Asp Ser Gly His Tyr Tyr Cys Val Val Arg 225 Asn Ser Ser Tyr Cys Leu Arg Ile Lys Ile Ser Ala Lys Phe Val Glu 245 250 Asn Glu Pro Asn Leu Cys Tyr Asn Ala Gln Ala Ile Phe Lys Gln Lys 265 Leu Pro Val Ala Gly Asp Gly Gly Leu Val Cys Pro Tyr Met Glu Phe 275 280 Phe Lys Asn Glu Asn Asn Glu Leu Pro Lys Leu Gln Trp Tyr Lys Asp 295 Cys Lys Pro Leu Leu Asp Asn Ile His Phe Ser Gly Val Lys Asp 305 310 320 Arg Leu Ile Val Met Asn Val Ala Glu Lys His Arg Gly Asn Tyr Thr Cys His Ala Ser Tyr Thr Tyr Leu Gly Lys Gln Tyr Pro Ile Thr Arq 345 Val Ile Glu Phe Ile Thr Leu Glu Glu Asn Lys Pro Thr Arg Pro Val 355 360 Ile Val Ser Pro Ala Asn Glu Thr Met Glu Val Asp Leu Gly Ser Gln 370 375 380

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Gly Lys Glu Val Leu Lys Thr Met Trp Leu Leu Arg Ser Ser Val Asn 115 120 125

Asp Ile Gly Asp Asp Trp Lys Ala Thr Arg Val Gly Ile Asn Ile Phe

105

130	135	140

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Ala Ty	r Trp 35	Lys	Trp	Asn	Gly	Ser 40	Val	Ile	Asp	Glu	Asp 45	Asp	Pro	Val	
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Tyr Ly	s His	Pro	Phe 85	Thr	Cys	Phe	Ala	Lys 90	Asn	Thr	His	Gly	Ile 95	Asp	
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